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(14)

No. 05-1056

IN THE

Supreme Court of the United States

MICROSOFT CORPORATION,

Petitioner,

v.

AT&T CORP.,

Respondent.

On Writ Of Certiorari
To The United States Court Of Appeals
For The Federal Circuit

BRIEF FOR PETITIONER

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QUESTIONS PRESENTED

Title 35 U.S.C. § 271(f) provides that it is an act of patent infringement to "suppl[y] . . . from the United States" a "component of a patented invention" in a manner that induces the combination of that component with other components outside of the United States. The questions presented are:

I. Whether copies of a "component" made in a foreign country are "supplie[d] . . . from the United States"; and

II. Whether a "binary sequence of numbers that lacks physical existence" may be considered a "component of a patented invention" within the meaning of Section 271(f).

PARTIES TO THE PROCEEDING AND RULE 29.6 STATEMENT

The caption contains the names of all the parties to the proceeding below.

The corporate disclosure statement included in the petition for a writ of certiorari remains accurate.

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BRIEF FOR PETITIONER

OPINIONS BELOW

The opinion of the court of appeals (Pet. App. 1a-19a) is reported at 414 F.3d 1366. The opinion of the district court (Pet. App. 20a-38a) is not officially reported but can be accessed at 2004 WL 406640.

JURISDICTION

The judgment of the court of appeals was entered on July 13, 2005. A timely petition for rehearing was denied on October 20, 2005. Pet. App. 39a. On January 12, 2006, Justice Stevens extended the time within which to file a petition for a writ of certiorari to and including February 17, 2006. No. 05A606. The petition for a writ of certiorari was filed on that date and was granted on October 27, 2006. This Court has jurisdiction under 28 U.S.C. § 1254(1).

STATUTORY PROVISION INVOLVED

Title 35 U.S.C. § 271(f) provides:

§ 271. Infringement of patent

* * *

(f)(1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or

commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

* * *

STATEMENT

On summary judgment, the district court held that Microsoft infringed AT&T's patent under Section 271(f) of the Patent Act—which prohibits "suppl[ying] ... from the United States" a "component of a patented invention"—based on the use of U.S.-supplied master versions of the object code for the Windows operating system by foreign manufacturers, who copied the master versions and, in turn, installed the foreign-made copies on foreign-made computers that were sold to foreign end-users. In a 2-1 decision, the Federal Circuit affirmed.

1. AT&T holds United States Reissue Patent 32,580 ("the '580 patent") entitled "Digital Speech Coder." Pet. App. 44a. AT&T's invention "relates to speech processing and more particularly to digital speech coding arrangements." '580 patent, col. 1:9-10 (Supp. J.A. 8). Speech coding is the process of compressing a digital speech signal in order to facilitate its electronic transmission and storage. The invention disclosed by the '580 patent aims to "provide improved speech coding of high quality at lower bit rates" than predecessor speech coding technology. *Id.* at col. 1:58-60 (Supp. J.A. 8). The '580 patent claims certain improved methods of speech coding and certain speech processor circuits capable of carrying out the improved speech coding methods. *See id.* at cols. 17-24 (Supp. J.A. 16-19).

Of particular relevance here is claim 40 of the '580 patent, which recites an "[a]pparatus for producing a speech

message comprising" various means for implementing the speech coding methods claimed elsewhere in the patent. '580 patent, col. 23:24-25 (Supp. J.A. 19) (italics omitted). A preferred embodiment of the inventive device is a general purpose computer programmed to act as the claimed speech processor. Indeed, the inventor appended to the '580 patent the source code for certain computer programs (written in FORTRAN programming language) that he used to instruct a Bell Labs supercomputer to test the improved speech coding methods. *Id.* apps. A-D (Supp. J.A. 12-15). The '580 patent thus teaches one skilled in the art to program a general purpose computer to function as the patented speech coding device. This invention—claimed more than a quarter-century ago—is today widely used in mobile phones and personal computers to achieve high-quality reproduction of digitally recorded speech.

Several computer programs created and licensed by Microsoft, most notably its flagship Windows operating system program, include one or more "speech codecs": computer programs that, when installed, make a general purpose computer "capable of coding—converting a speech signal into a more compact code—and decoding—converting the more compact code back into a signal that sounds like the original speech signal." Am. Compl. ¶ 14 (J.A. 15); *see also* Pet. App. 3a.

The operative complaint alleges that "products that have incorporated and/or supported" Microsoft's speech codecs—including all computers in the United States running the Windows operating system—infringe the '580 patent's apparatus claims because they are capable of recording, storing, and playing back speech in a manner substantially similar to that described in the '580 patent. Am. Compl. ¶ 44 (J.A. 20). AT&T alleged that Microsoft induced those acts of infringement by licensing copies of the object code for the Windows operating system, which when installed on a compatible computer system is capable of performing the function of the

patented invention. Microsoft eventually stipulated that, by licensing copies of the Windows object code to manufacturers of computers that are ultimately sold in the United States, it induced infringement of the '580 patent. *See* Pet. App. 42a; *see also* 35 U.S.C. § 271(b).[1]

AT&T also alleged that Microsoft had infringed the apparatus claims of the patent under Section 271(f) by exporting a "component"—the "Windows software containing the allegedly infringing codecs"—that was combined overseas to produce an apparatus that, had it been produced in the United States, would infringe. Pet. App. 24a.

Microsoft transmits master versions of the Windows operating system program to foreign computer manufacturers either on "golden master disks" or in encrypted electronic transmissions. Pet. App. 45a-46a ¶¶ 5, 7. The parties have stipulated that neither the electronically transmitted master version nor the golden master "disk itself is []ever installed on a computer that is then sold." *Id.* at 45a ¶ 5. Each foreign manufacturer instead uses the master version to produce, in the foreign country, duplicate copies of the Windows object code. *Id.* at 45a-46a ¶¶ 5-7. It is these copies, and only these copies, that are installed on foreign-manufactured computers. *Id.* at 46a ¶ 9.[2]

On summary judgment, AT&T asserted that the golden master disks and encrypted electronic transmissions containing Windows object code constitute "components" of

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[1] Microsoft also installed the Windows object code on Microsoft-owned computers during the software development process, and consequently stipulated to direct infringement under Section 271(a).

[2] In fact, the "installation" process itself involves an act of duplication. *See Stenograph L.L.C. v. Bossard Assocs., Inc.*, 144 F.3d 96, 100 (D.C. Cir. 1998) ("installation of software onto a computer results in 'copying'"). The object code is read from the golden master disk and physically scrivened onto the foreign computer's hard drive. *See* RON WHITE, HOW COMPUTERS WORK 144-45, 172-73 (8th ed. 2006).

AT&T's patented Digital Speech Coder apparatus and that the foreign-produced copies of the object code installed on the foreign-manufactured computers are "supplie[d]" by Microsoft "from the United States." Pet. App. 46a ¶ 10. Microsoft argued conversely that the foreign replicators—not Microsoft—provided the versions of Windows actually installed on the foreign-made computers, and that what Microsoft did supply—master versions of the machine-readable object code—were not "components" of AT&T's patented invention within the meaning of Section 271(f). *Ibid.*

2. The district court denied Microsoft's motion for partial summary judgment. Pet. App. 22a. The court held that the Windows object code sent by golden master disks and encrypted electronic transmissions to foreign manufacturers was a "component" of AT&T's Digital Speech Coder device. *Id.* at 31a. The court further held that Microsoft had "supplie[d] . . . from the United States" each of the tens of millions of foreign-made copies of the Windows object code because "replication of the object code abroad" is different in kind from the "manufactur[e] . . . of it . . . abroad." *Id.* at 35a.

3. A divided panel of the Federal Circuit affirmed. Pet. App. 11a.

a. In determining whether the computer programs embodied in the golden master disks and encrypted electronic transmissions were "components" of AT&T's patented invention, the panel majority relied on *Eolas Technologies Inc.* v. *Microsoft Corp.*, 399 F.3d 1325, 1339 (Fed. Cir.), *cert. denied*, 126 S. Ct. 568 (2005), which was decided while the appeal in this case was pending. *Eolas* held that "computer readable program code" is a "component" within the meaning of Section 271(f) because that code is "the key part" of a patented computer invention that "drives the functional nucleus of the finished computer product." *Ibid.* (internal quotation marks omitted). The panel in this case adopted the *Eo-*

las court's conclusion without expanding upon its analysis. Pet. App. 4a.

The panel majority further concluded that Microsoft was liable under Section 271(f) for each foreign copy of the computer-readable Windows object code produced using the golden master disks and electronic transmissions shipped from the United States. Pet. App. 7a. The court held that each of these foreign-made copies had "*essentially* been supplied from the United States" because "[c]opying . . . is part and parcel of software distribution," and therefore, "for software 'components,' the act of copying is subsumed in the act of 'supplying.'" *Id.* at 6a, 7a (emphasis added); *see also id.* at 7a ("It is inherent in the nature of software that [it] . . . may be replicated"). In reaching this conclusion, the court candidly acknowledged that it was interpreting Section 271(f) to account for "the realities of software distribution" and to ensure that the statute "remain[s] effective" in a rapidly changing world. *Id.* at 7a, 10a. A conclusion that foreign-made copies were not supplied from the United States, the panel majority asserted, would "permit[] a technical avoidance of the statute by ignoring the advances in a field of technology . . . that developed after the enactment of § 271(f)" and "would emasculate § 271(f) for software inventions." *Id.* at 6a n.2, 10a. The panel majority accorded no significance to the ready availability of foreign patents to protect AT&T from acts of foreign infringement, finding it more appropriate to "construe our statutes irrespective of the existence or non-existence of foreign patents." *Id.* at 6a n.2.

b. Judge Rader dissented. Although he agreed that *Eolas* was controlling as to the issue of whether the object code for the Windows operating system could be a "component of a patented invention," Judge Rader disagreed with the majority's conclusion that the foreign-manufactured copies of the Windows object code had been "supplie[d] . . . from the United States." Pet. App. 11a.

Judge Rader rejected the panel majority's contention that the "act of copying is subsumed in the act of 'supplying,'" Pet. App. 6a, finding such reasoning to be contrary to the "ordinary meaning of 'supplies.'" *Id.* at 12a. The necessary consequence of the panel majority's holding, Judge Rader recognized, was to "provide[] extraterritorial expansion to U.S. law by punishing under U.S. law 'copying' that occurs abroad." *Ibid.* The majority opinion was flawed, Judge Rader continued, because it "holds Microsoft liable for the activities of *foreign manufacturers making copies* of the patented component abroad" in the absence of a clear indication of Congress's intention to do so. *Id.* at 16a-17a. Judge Rader concluded that—rather than seeking to give extraterritorial effect to U.S. patent law—the proper course of action for AT&T would have been to "protect its *foreign* markets from *foreign* competitors by obtaining and enforcing *foreign* patents." *Id.* at 18a-19a (emphases added).

SUMMARY OF ARGUMENT

In holding Microsoft liable for infringing AT&T's patent under 35 U.S.C. § 271(f), the Federal Circuit committed two significant errors. *First*, it incorrectly concluded that *copies* of the object code for the Windows operating system made in a foreign country are nonetheless "supplie[d] . . . from the United States"; and *second*, it incorrectly concluded that what Microsoft did supply from the United States—golden master disks and encrypted transmissions containing the Windows object code—could be considered "components" of AT&T's patented invention under Section 271(f).

I. In *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 518 (1972), this Court held that it was not an act of infringement to make the components of a patented invention in the United States and ship them abroad for final assembly. Congress responded to *Deepsouth* by enacting Section 271(f), which makes it an act of infringement to "suppl[y] . . . from the United States" the components of a patented invention in

a manner that induces the overseas combination of "such components." The "components" allegedly combined overseas in this case—the copies of Windows object code installed on and executed by foreign-built computers—were made in a foreign country; they were not supplied from the United States.

A. "Supply" means to "furnish or provide." The only things Microsoft furnishes from the United States are the golden master disks and encrypted transmissions containing master versions of the Windows object code. But those masters are never installed on a computer that is sold; rather, only the foreign-made *copies* of Windows are installed on foreign-built computers.

1. The Federal Circuit held that Microsoft had "supplie[d]" the "foreign-made copies" from the United States, reasoning that "for software 'components,' the act of copying is subsumed in the act of 'supplying.'" Pet. App. 6a. This is plainly wrong. "Supply" of "components" constitutes an act of infringement only when it induces the combination of "such components," *i.e.*, the same components "supplied," to form a patented invention. 35 U.S.C. § 271(f)(1); *see also id.* § 271(f)(2). Section 271(f) does not prohibit inducing the combination of *copies* of the components supplied from the United States.

Judge Rader, dissenting below, recognized that "[t]he act of supplying is separate and distinct from copying, reproducing, or manufacturing." The majority, however, was of the view that copying is "part and parcel of software distribution." It is, but copying is also inherent in distributing any other product, including the shrimp deveining machines at issue in *Deepsouth*. If a manufacturer exported a prototype shrimp deveining machine from which copies of the parts were made and assembled overseas, there would be no infringement under Section 271(f). And AT&T has conceded that "there is no indication that Congress meant to treat soft-

ware . . . any differently from any other components of patented inventions" for purposes of Section 271(f).

2. To win this case, AT&T must show that Section 271(f) requires treating software components differently from all other components. This it cannot do.

a. Software may refer to a computer program embodied in a computer-readable medium or to a computer program in the abstract. A computer program consists of the instructions that, when installed on a compatible computer, direct the computer to perform specified functions. These instructions are written in the binary language of computers, which can be transliterated as "1's" and "0's." Each digit instructs the computer to either open or close a switch. When a particular sequence of commands (a computer program) is installed on a computer-readable medium, such as a disk, the computer may execute the program to perform the desired function. A computer program is not functional unless it is embodied in a computer-readable medium.

b. AT&T stipulated that only *copies* of the Windows program are installed on the foreign-built computers at issue. But it claims that these copies were "supplie[d] . . . from the United States" because they contain the "very same zeros and ones created in the U.S. by Microsoft programmers." That position contravenes AT&T's own theory of liability, which seeks to hold Microsoft liable for each and every foreign-made computer running a foreign-made copy of Windows. Moreover, when a computer program is copied, a *new* sequence of digital information is physically scrivened onto the recipient hard drive or other medium. The content—the object code—may be identical to the master version, but it is not the same sequence any more than a machine part turned on a duplicating lathe is the same as the identical template from which it was produced.

B. Extending Section 271(f) to foreign-made copies of software components would transgress at least two principles of statutory construction.

1. In responding to *Deepsouth*, Congress sought to prohibit the domestic manufacture of component parts for assembly overseas. Because the copies at issue in this case were not manufactured in the United States, imposing infringement liability would frustrate rather than further the congressional objective in enacting Section 271(f). The Federal Circuit majority sought to justify its departure from the statutory text by pointing to "advances in a field of technology . . . that developed *after* the enactment" of the statute; but this Court has repeatedly emphasized that the Patent Act must be construed as enacted, leaving it to Congress to respond to changing circumstances. *E.g.*, *Parker* v. *Flook*, 437 U.S. 584 (1978); *Brown* v. *Duchesne*, 60 U.S. (19 How.) 183 (1857).

2. The presumption against extraterritoriality removes any possible doubt about the application of Section 271(f) to foreign-produced copies. The Court has repeatedly held that the Patent Act does not reach overseas conduct. *E.g.*, *Dowagiac Mfg. Co.* v. *Minn. Moline Plow Co.*, 235 U.S. 641 (1915). The Federal Circuit, however, impermissibly gave Section 271(f) extraterritorial effect by imposing infringement liability on conduct (the making of copies) that occurs entirely on foreign soil.

II. The parties stipulated below that the "components" in issue were the golden master disks and the encrypted transmissions containing master versions of the Windows object code. In this Court, AT&T contends that the relevant "component" is a "binary sequence of numbers that lacks physical existence." Neither articulation amounts to a "component" under the statute.

A. The golden master disks and encrypted transmissions are not components because they are never "combined" with

other components to practice the claimed invention. The parties stipulated that the master versions of the code conveyed by these media are never installed on a computer that is sold.

B. Although computer programs recorded on machine-readable media may be statutory components, the abstract instructions comprising such programs—a "binary sequence of numbers that lacks physical existence," in AT&T's formulation—cannot be a component of a patented invention within the meaning of Section 271(f).

1. Uncoupled from any computer-readable medium, the abstract sequence is nothing other than design information. When read and executed by a computer (from a computer-readable medium) the sequence can direct that computer to alter its circuitry to perform certain specialized functions, but standing alone, the sequence of numbers is nothing other than abstract instructions. Section 271(f) "refers to the physical supply of components, not simply to the supply of instructions." *Pellegrini* v. *Analog Devices, Inc.*, 375 F.3d 1113, 1118 (Fed. Cir. 2004).

2. AT&T's theory that an abstract sequence can be a component cannot be reconciled with the statutory text, which requires that a component be capable of being "combined" with other components. Abstract information, floating in the ether, cannot be combined with anything. Nor can abstract information be exported or "supplied." Abstract information does not travel. Before information can move from one physical location to another, it must first be reduced to some physical medium, whether a sound wave, electromagnetic impulse, or a piece of paper.

ARGUMENT

Section 271(f) makes it an act of patent infringement to "suppl[y] . . . from the United States" a "component" of a patented invention with the intent that the component thus supplied be "combin[ed]" with other components overseas in a manner that would infringe had the combination occurred

in the United States. Analysis of claims under Section 271(f) thus requires both identifying the relevant components of the patented invention and determining whether the accused infringer supplied those components from the United States.[3]

The parties stipulated that Microsoft supplies from the United States "a limited number of 'golden master' disks . . . on which the machine-readable object code for the Windows operating system software is stored." Pet. App. 45a ¶ 4. "Microsoft also supplies its Windows operating system object code from the United States . . . by sending to [foreign manufacturers] a single encrypted transmission of the object code." *Id.* at 46a ¶ 7. The parties further stipulated "that, other than the 'golden master disks' and the encrypted transmissions of Windows object code, Microsoft does not supply any 'component' from the United States for assembly abroad." *Id.* at 47a ¶ 10.

The parties also stipulated that the master versions of the Windows object code embodied in the golden master disks and encrypted electronic transmissions are "never installed on a computer that is then sold." Pet. App. 45a ¶ 5. Rather, the foreign manufacturers use the master versions to "make

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[3] AT&T never clarified whether it was proceeding under Section 271(f)(1), Section 271(f)(2), or both, and the courts below held generically that Microsoft was liable under "Section 271(f)." *See, e.g.*, Pet. App. 11a ("[T]he judgment of the district court holding Microsoft liable under § 271(f) is affirmed"). Microsoft could possibly be liable only under Section 271(f)(1) because Windows is not "especially made or especially adapted for use in [AT&T's patented] invention," as 35 U.S.C. § 271(f)(2) requires. *See Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 377 U.S. 476, 488 n.7 (1964). In any event, the result would be the same under either provision because both include the same operative language—"component" and "supplie[d] . . . from the United States," and "[i]n granting certiorari, [this Court] necessarily considered and rejected" AT&T's belated invocation of Section 271(f)(2) "as a basis for denying review." *United States* v. *Williams*, 504 U.S. 36, 40 (1992).

. . . copies of the object code" and "install those copies onto computer hardware." *Id.* at 46a ¶ 9.

These stipulated facts, and the plain language of Section 271(f), establish that Microsoft has committed no act of infringement under that statute. The foreign-produced copies of the object code for the Windows operating system were not "supplie[d] . . . from the United States"—they were made overseas. And what Microsoft did supply—golden master disks and electronic transmissions conveying master versions of the Windows object code—are not "components" because the physical media were not, and the abstract information they conveyed could not be, "combined" overseas to practice the claimed invention.

I. Foreign-Made Copies Of The Object Code For The Windows Operating System Were Not "Supplie[d]" By Microsoft "From The United States"

In *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 518 (1972), this Court held that a company was not liable for patent infringement under 35 U.S.C. § 271(a)—which prohibits "mak[ing] . . . a[] patented invention, within the United States," without authorization—where it manufactured all the component parts of a patented shrimp deveining machine in the United States and shipped those parts for final assembly abroad. 406 U.S. at 524. Because the final assembly occurred in a foreign country, the Court concluded that the defendant did not "make" the patented machine within the United States and therefore did not infringe the patent. *Id.* at 527. The Court emphasized the territorially limited nature of the U.S. patent laws, explaining that Section 271(a) "makes it clear that it is not an infringement to make or use a patented product outside of the United States." *Ibid.* Recognizing that its decision might be viewed as opening a loophole in the patent laws, the *Deepsouth* Court invited Congress to provide a "clear . . . indication of intent to extend the patent privi-

lege" to the export of components of a patented invention for assembly abroad. *Id.* at 532.

Congress responded to *Deepsouth* by enacting Section 271(f) as part of the Patent Law Amendments Act of 1984, Pub. L. No. 98-622, § 101, 98 Stat. 3383, 3383. *See* 130 Cong. Rec. H10,525 (Oct. 1, 1984) ("This proposal responds to the United States Supreme Court decision in [*Deepsouth*], concerning the need for a legislative solution to close a loophole in patent law"); S. Rep. No. 663, 98th Cong., 2d Sess. 2-3 (1984) (explaining that the "provision is a response to the Supreme Court's 1972 *Deepsouth* decision").

In order to prevent *Deepsouth*-like schemes from circumventing infringement liability, Section 271(f) makes it an act of infringement to "suppl[y] . . . from the United States" the "components of a patented invention" in a manner that induces the combination of "such components" abroad. As Congress's use of "such components" attests, liability attaches only where the defendant induces the overseas combination of the *same* components that it shipped from the United States. The copies of computer-readable object code for the Windows operating system that are installed on the foreign-assembled computers are made by foreign manufacturers, in foreign countries, and thus were not "supplie[d] . . . from the United States" within the meaning of Section 271(f).

A. The Plain Language Of Section 271(f) Does Not Encompass Foreign-Made Copies

As AT&T agrees (Second Supp. Cert. Br. 3), the ordinary meaning of the verb "supply" is "to furnish or provide." RANDOM HOUSE UNABRIDGED DICTIONARY 1912 (2d ed. 1993); *see also Asgrow Seed Co.* v. *Winterboer*, 513 U.S. 179, 187 (1995) (where Congress uses an undefined term, courts should afford the term its ordinary meaning). As this Court has explained in a different context, "to furnish means

to supply." *E.W. Bliss Co.* v. *United States*, 248 U.S. 37, 45 (1918). Thus, Microsoft cannot be held liable under Section 271(f) unless it induces foreign manufacturers to combine the same components that it furnishes from the United States to practice the patented invention. But the *only* things Microsoft furnishes from the United States are master versions of the object code for the Windows operating system (via golden master disk or encrypted transmission); and it is undisputed that those master versions are never installed on a computer that is then sold. Pet. App. 45a ¶ 5, 46a ¶ 7. Rather, foreign manufacturers use the master versions to produce *copies* of the object code that they then install on computer hardware and sell as part of completed computer systems to overseas end-users. *Id.* at 45a ¶ 5, 46a ¶ 7. These foreign-made copies were *not* furnished by Microsoft from the United States.

Just as supplying a product that can be used to produce copies is not the same thing as supplying the copies themselves, *see Sony Corp. of Am.* v. *Universal City Studios, Inc.*, 464 U.S. 417, 436 (1984), supplying a master template or prototype from which copies can be produced is not the same thing as actually supplying those copies. The fact that, today, computer programs can be duplicated with relative ease does not mean that, by encoding a computer program on a golden master disk and shipping that master version to foreign manufacturers who produce duplicate copies of the object code, Microsoft has done anything more than "suppl[y] . . . from the United States" the single master version of the object code—a master that "is never installed on a computer that is then sold." Pet. App. 45a ¶ 5. The copies of the object code that are installed on computers built overseas are themselves made overseas—they are not supplied from the United States. To be sure, those copies convey the same set of instructions as the master version; but they are different from the master, just as a machine part turned on a duplicating lathe is identical to but different from the

template. *See, e.g.*, Shopsmith Lathe Duplicator, *at* http://www.shopsmith.com/ownersite/catalog/latheduplicator.htm (last visited Dec. 4, 2006).

1. Judge Rader, in his dissent below, correctly understood that a copy made overseas is not supplied from the United States. As he explained, "[t]he ordinary meaning of 'supplies[]' . . . does not include 'copying,' 'replicating,' or 'reproducing'—in effect 'manufacturing.'" Pet. App. 12a. Rather, "[t]he act of supplying is separate and distinct from copying, reproducing, or manufacturing." *Ibid.* "As a matter of logic," he continued, "one cannot supply one hundred components of a patented invention without first making one hundred copies of the component, regardless of whether the components supplied are physical parts or intangible software." *Id.* at 13a. But foreign "manufacturers do not install the actual component 'supplied' from the U.S. (the master disc). Instead, they install a copy made [overseas]. Thus, . . . liability cannot attach under § 271(f) because the components actually assembled into the infringing products were never literally 'shipped from the United States.'" *Id.* at 15a-16a (quoting *Pellegrini* v. *Analog Devices, Inc.*, 375 F.3d 1113, 1117 (Fed. Cir.), *cert. denied*, 543 U.S. 1003 (2004)).

The Federal Circuit majority recognized—as it had to—that Microsoft does not actually "suppl[y] . . . from the United States" the foreign-produced copies of Windows object code. Instead, the court of appeals majority was of the view that "such resulting copies have *essentially* been supplied from the United States." Pet. App. 7a (emphasis added). The Federal Circuit's use of the modifier "essentially" is an acknowledgment that Microsoft does not *actually* supply the copies from the United States. *See also id.* at 4a ("software replicated abroad from a master version exported from the United States . . . may be *deemed* 'supplied' from the United States") (emphasis added). But Congress used no such modifiers; the statute as enacted applies only to the act of actually supplying a component from the United States.

See Rodriguez v. *Compass Shipping Co.*, 451 U.S. 596, 617 (1981) ("As with other problems of interpreting the intent of Congress in fashioning various details of [a] legislative compromise, the wisest course is to adhere closely to what Congress has written"). And the court of appeals' efforts to justify its departure from the plain language of the statute are sorely lacking.

The Federal Circuit first asserted that "the 'supplying' of software commonly involves generating a copy" and that "[c]opying . . . is part and parcel of software distribution." Pet. App. 6a. Of course, software producers and content providers go to great lengths to prevent unauthorized duplication of their products. *Cf. Metro-Goldwyn-Mayer Studios Inc.* v. *Grokster, Ltd.*, 545 U.S. 913 (2005). And although *authorized* copying is inherent in the distribution of software, *any* business that derives profit from the sale of multiple identical products is dependent on the "copying" of the products' components. The pharmaceutical industry, for example, is based on the mass production of identical copies of compounds, many of them patented. Indeed, the manufacturer in *Deepsouth* was engaged in supplying *copies* of the components for shrimp deveining machines. The key question under Section 271(f) cannot be whether a copy is involved in the alleged infringement; in the case of volume sellers, the allegedly infringing product almost always will include copied components. Rather, the question must be *where* the copying takes place. If the accused infringer copies a component in the United States and exports those copies for inclusion into foreign products, then liability may attach; but if the accused infringer sends abroad a master version of the component that itself is never combined into a patented invention but instead is copied, then there is no liability under Section 271(f).

The court of appeals also opined that "[i]t is inherent in the nature of software that one can supply only a single disk that may be replicated—saving material, shipping, and stor-

age costs—instead of supplying a separate disk for each copy of the software to be sold abroad." Pet. App. 7a. But it is equally inherent in the nature of shrimp deveining machines that a domestic company can save "material, shipping, and storage costs" by sending a master version of the machine's components abroad for foreign replication. Conversely, a domestic company that, like the accused infringer in *Deepsouth*, chooses to make multiple copies of components in the United States and then export them will incur the costs of so doing. As Judge Rader recognized, "[t]he only true difference between making and supplying software components and physical components is that copies of software components are easier to make and transport"; but this "is not the proper basis for making distinctions under § 271(f)." *Id.* at 14a. Incurring costs such as those for materials, shipping, and storage is inherent in the act of "supply." The Federal Circuit's acknowledgment that Microsoft saves such costs by sending only a master version abroad for replication compels the conclusion that there has been no "supply."

It is both incorrect and insufficient to say, as the Federal Circuit did, that "for software 'components,' the act of copying is subsumed in the act of 'supplying,' such that sending a single copy abroad with the intent that it be replicated invokes § 271(f) liability for those foreign-made copies." Pet. App. 6a. That *ipse dixit* simply assumes the answer to the first question presented and reads out of the statute the language providing that liability for "suppl[ying]" the components of a patented invention "from the United States" can attach only where "such components"—that is, the same components that are "supplie[d] ... from the United States"—are combined or intended to be combined overseas. The Federal Circuit's flawed reasoning also impermissibly

treats software products differently from all other products that might be subject to Section 271(f).[4]

A simple example illustrates the absurdity of the Federal Circuit's approach. Suppose that a domestic manufacturer sends a single shrimp deveining machine to its counterpart in a foreign city. The foreign manufacturer then disassembles the machine, creates a series of dies or molds, and copies each of the components of the machine. The foreign manufacturer then assembles 100 machines entirely from the foreign-made copies, and sells them to foreign buyers. Would the domestic manufacturer have "supplie[d] . . . from the United States" the components of 100 shrimp deveining machines? Of course not. Similarly, suppose that the domestic manufacturer ships abroad the dies and molds, from which the foreign manufacturer makes copies of all the parts. The domestic manufacturer would not have "supplie[d] . . . from the United States" each machine assembled from those foreign-made parts. Finally, suppose that the domestic manufacturer, rather than sending the actual machine, sends the blueprints or design specifications for each of the parts to his foreign counterpart. If the foreign manufacturer uses the plans to make copies of all the parts, then assembles and sells machines abroad, the domestic manufacturer certainly has not "supplie[d] . . . from the United States" those foreign-assembled machines.

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[4] The copyright laws demonstrate that the Federal Circuit was wrong to conclude that the supply of an original subsumes all subsequently made copies. Creators of computer programs have a number of exclusive rights, including the right to prevent copying. 17 U.S.C. § 103. The copyright laws place specific, narrowly tailored limitations on these exclusive rights, including by granting the owner of a copy of a computer program the express authority to make additional copies in the installation process or as backups. *Id.* § 117(a). If copying were truly a legally irrelevant activity subsumed in the act of supplying, these statutory exceptions to copyright holders' exclusive rights would be unnecessary.

AT&T has conceded that "there is absolutely no indication that Congress meant to treat software . . . any differently from any other components of patented inventions" for purposes of Section 271(f). Second Supp. Cert. Br. 4; *cf.* TRIPS Agreement pt. II, § 5 (1994) (requiring signatories to "accord the same treatment to all forms of invention"). If foreign-made copies of the components of a shrimp deveining machine would not lead to infringement liability because the copies are not supplied from the United States, as they obviously would not, then neither can a foreign-made copy of the object code for the Windows operating system serve as the predicate for a Section 271(f) violation. The Federal Circuit's contrary conclusion, if sustained, would subject software producers to a different, and far more unfavorable, regime than applies to every other domestic business. Thus, while AT&T criticizes Microsoft (and the United States) for supposedly advocating a "software exception" to Section 271(f) (Second Supp. Cert. Br. 4), it is AT&T's position that would put software engineers on unequal footing.

2. To win this case, AT&T must show that Section 271(f) as enacted by Congress requires treating software differently from the components of a shrimp deveining machine, such that foreign-made copies of the former can somehow trigger liability while foreign-made copies of the latter obviously cannot. This AT&T cannot do.

a. "Software" is a term frequently used but imperfectly understood. It is common ground that software includes "[t]he programs used to direct the operation of a computer." RANDOM HOUSE UNABRIDGED DICTIONARY 1814; *see also* MICROSOFT COMPUTER DICTIONARY 489 (5th ed. 2002) (defining "software" as a "[c]omputer program[]; instructions that make hardware work"). A computer program is a "set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." 17 U.S.C. § 101; *see also, e.g.*, *Fantasy Sports Props., Inc.* v. *Sportsline.com, Inc.*, 287 F.3d 1108, 1118 (Fed. Cir. 2002) (a com-

puter program is "a set of instructions, known as code, that directs a computer to perform specified functions or operations"); UNITED STATES PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINATION PROCEDURE § 2106.01(I)(a) (rev. 8th ed. 2006) ("a computer program is merely a set of instructions capable of being executed by a computer").

The ultimate goal of a computer program is to instruct the computer to perform a desired function. The programmers of the earliest computers had to physically rewire the machine to perform each new function.[5] Today's computer programs instruct the computer to rewire itself. Such programs are originally written as "source code"—human-readable commands to the computer—in a programming language such as BASIC, FORTRAN, or C++. *See Gates Rubber Co.* v. *Bando Chem. Indus., Ltd.*, 9 F.3d 823, 835 (10th Cir. 1993); *see also* '580 patent, apps. A-D (Supp. J.A. 12-15) (FORTRAN source code for computer program that causes a computer to perform speech coding functions). To make the instructions executable by a computer, source code is run through a "compiler" that translates the human-readable source code into computer-readable "object code," which is expressed in the digital binary language that can be transliterated as "1's" and "0's." Each digit represents an instruction to the computer's processor to open or close one of its millions of switches. The object code is thus a set of instructions for aligning a computer's circuits in a particular manner to achieve a particular functionality.

Antique player pianos employ technology comparable to rudimentary software technology. A music roll for a player piano has 88 columns—one for each of the 88 keys on a pi-

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[5] To program ENIAC—a 30-ton computer built for the U.S. Army in 1943—technicians had to manually wire a series of switches in a precise arrangement. It took two days to set up a program ENIAC could execute in approximately two seconds. WHITE, *supra*, at 6.

ano. A perforation in a particular column causes the player piano to depress the corresponding key and strike the corresponding strings. *See generally White-Smith Music Publ'g Co.* v. *Apollo Co.*, 209 U.S. 1, 9-10 (1908) (copyright case describing the mechanics of a player piano). The player piano roll is software for player piano hardware; it is a set of instructions, readable and executable by the hardware, to perform a certain function—the physical production of a piece of music. Technicians transcribed musical compositions into the machine-readable piano roll format—*i.e.*, wrote the software—either by reading sheet music and manually punching holes into a master template, or playing the composition on a piano modified with a device that produced a perforated matrix from which a master template could be made. *Id.* at 10-11 ("persons skilled in the art can take such pieces of sheet music in staff notation, and by means of the proper instruments make drawings indicating the perforations, which are afterwards outlined and cut upon the rolls in such wise as to reproduce, with the aid of the other mechanism, the music which is recorded in the copyrighted sheets").

Analytically similar punch-card technology also played an important role in the history of computing. At its core, a computer is simply a conglomeration of on/off switches. *See* RON WHITE, HOW COMPUTERS WORK 53 (8th ed. 2006) ("The easiest way to visualize how computers work is to think of them as enormous collections of switches"). The once-ubiquitous 80-column cards pioneered by IBM contained series of "punches" that, read by a computer in sequence, instructed the computer's processor either to keep its switches in their existing state (no punch) or to change state (punch). *See* Dale Fisk, Programming with Punched Cards 1 (2005), *at* http://www.columbia.edu/acis/history/fisk.pdf. "[T]he punch cards [we]re fed into the computer, the information contained thereon [wa]s recorded in the inner operations of the machine; at the completion of the process the computer [wa]s programmed." *District of Columbia* v. *Uni-*

versal Computer Assocs., Inc., 465 F.2d 615, 617 (D.C. Cir. 1972).

Although the technology has advanced, the methodology fundamentally remains the same. Rather than holes in punch cards, CDs and DVDs store the commands to open or close a computer's internal switches in the form of a series of pits (indentations) and lands (the areas between the pits); hard drives store those commands by aligning pairs of bands of magnetically charged particles in either the same or opposite polarity. WHITE, *supra*, at 144-45. Each pit and land on a CD-ROM, and each pair of magnetically charged bands on a hard drive, represents a bit—in the binary digital language of computers, a "1" or a "0". Different patterns of bits correspond to different commands to the machine. The instructions embodied in the pits and lands of a CD-ROM or the magnetically charged particles on a hard disk platter (software) control the operations of the computer (hardware) by directing switches to open or close. It is the "opening and closing of the interconnected switches" that "creates electrical paths . . . that cause [the computer] to perform the desired function." *WMS Gaming Inc.* v. *Int'l Game Tech.*, 184 F.3d 1339, 1348 n.3 (Fed. Cir. 1999). Today's personal computers possess microprocessors—less than a square centimeter in size—that contain more than 150 million switches and can perform up to two billion operations per second.

b. The stipulation that AT&T signed in this case clearly states that foreign manufacturers "*make . . . copies* of the object code for the Windows operating system (created from the golden master disks and/or electronically transmitted software code)" and "install *those copies* onto computer hardware." Pet. App. 46a ¶ 9 (emphases added). AT&T has argued that the copies of Windows at issue in this case, while concededly made in a foreign country, are "nevertheless supplied from the United States" because "[t]he very same zeros and ones created in the U.S. by Microsoft programmers are

installed on the foreign computers." Br. in Opp. to Pet. for Cert. 17-18. That formulation misstates the issue in this case.

AT&T's position that the copies are the "very same" as the master contravenes AT&T's own theory of liability. AT&T disregards the fact that it is attempting to hold Microsoft liable for each device that practices its patented invention—*i.e.*, for each foreign-made computer on which a foreign-made copy of Windows has been installed. Because AT&T is seeking to premise Section 271(f) liability on each of those physical embodiments of the code, AT&T is wrong to assert that the "issue is not whether Microsoft supplied each of the individual physical containers in which that code is stored." Second Supp. Cert. Br. 4 (emphasis omitted). That is *precisely* the issue in this case. If it were not, Microsoft would be liable, at most, for a single act of infringement for each master version shipped overseas, rather than being confronted with the prospect of staggering liability for each of the tens of millions of foreign-produced copies.

Moreover, AT&T's contention that the copies contain the "very same" 1's and 0's as the master contradicts the laws of physics. Neither the golden master disks nor the encrypted transmissions contain any 1's and 0's at all. Rather, they contain pits and lands (on the disk) or electromagnetic impulses (in the transmission) describing a binary sequence that can be transliterated as 1's and 0's. When the sequence is copied, a *new* sequence of binary instructions is physically scrivened into the recipient storage medium. The object code is virtually identical to that found on the master version; but it is not the "very same" as the master. The golden master disks and electronic transmissions are analogous to the "glass master" disks commonly used in the replication of CDs and DVDs. In the process of glass mastering, the manufacturer creates a template that is the physical inverse of the CD or DVD; where the original CD has pits, the glass master has lands. The glass master disk is then used to stamp out physical inversions of itself, which is to say, copies of the original.

See Optical Disc Corp. v. *Del Mar Avionics*, 208 F.3d 1324, 1325-26 (Fed. Cir. 2000). While they are identical, they are not the "very same." That foreign manufacturers copy the object code digitally rather than mechanically (as it would have been if Microsoft shipped glass master disks rather than golden master disks) is irrelevant.

Indeed, when object code is copied from a CD-ROM and installed on a foreign computer's hard drive, the resulting copy is not the "same" as the master at all; it is physically different and obviously so. On a CD-ROM, the computer program instructions are encoded in the form of pits and lands; on the surface of a hard disk platter in a hard drive, the instructions are embodied in the form of pairs of bands of iron particles that are aligned in the same (for 0's) or opposite (for 1's) polarity. *See* WHITE, *supra*, at 144-45, 172-73.

The flaws in AT&T's analysis are evident when one considers the identical question in the context of yesterday's technology. Suppose Microsoft compiled the object code for Windows and stored it, not on CDs or other modern media, but on 80-column IBM punch cards. The resultant deck of object cards could be run through a computer (equipped with a suitable card reader) to, *inter alia*, practice AT&T's claimed invention. If Microsoft shipped the object deck to a foreign manufacturer, who in turn made 100 copies of the object deck and bundled those copies with 100 foreign-made computers for sale to 100 foreign end-users, would Microsoft have committed 100 acts of infringement under Section 271(f)? The answer is clearly no, because the copies were not supplied from the United States; and the same answer holds if the object code is transmitted via golden master disk or electronic transmission.

Indeed, it would be possible (although far from practical) to write out the object code for Windows longhand, as a literal series of 1's and 0's. Suppose Microsoft were to do so, and then ship the stack of paper to a foreign manufacturer,

who in turn enters each digit manually into a computer that produces disks containing machine-readable copies of the code. Under AT&T's theory, because each disk contains the "very same 1s and 0s" as the original manuscript, the domestic author has "supplied" each copy from the United States. But neither law nor logic will support such a conclusion. And if the theory does not hold for the manuscript original, it equally cannot hold for the originals transmitted via golden master disk or electronic transmission.[6]

"[W]here, as here, the statute's language is plain, the sole function of the courts is to enforce it according to its terms." *United States* v. *Ron Pair Enters., Inc.*, 489 U.S. 235, 241 (1989) (internal quotation marks omitted). The language of Section 271(f) is very clear: It imposes infringement liability only on those who "supply or cause to be supplied in or from the United States" the component of a patented invention. Microsoft has supplied no such component: The copies of Windows at issue were made in foreign countries, not supplied from the United States. Enforcing the statute according to its terms requires reversal of the decision below.

B. Traditional Principles Of Statutory Construction Prohibit The Extension Of Section 271(f) To Foreign-Made Copies

1. The expansive reading of Section 271(f) urged by AT&T and accepted by the Federal Circuit majority turns a blind eye to the objectives that Congress sought to accomplish when enacting that provision, and would (if accepted)

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[6] Of course, the manuscript and the punch cards in these examples—like any other recordation of the Windows object code, including the golden master disks—would be protected by the copyright laws. *See, e.g., Lexmark Int'l, Inc.* v. *Static Control Components, Inc.*, 387 F.3d 522, 533 (6th Cir. 2004). The legality of extraterritorial copying under those laws is not at issue in this case.

constitute a judicial arrogation of authority properly reserved to Congress.

In order to close the patent-law "loophole" identified by the Court in *Deepsouth*, Section 271(f) imposes a narrow limitation on the right of American companies to compete overseas with U.S. patent holders by supplying components from the United States. Under Section 271(f), "a product's patent cannot be avoided through the *manufacture of component parts within the United States* for assembly outside the United States." 130 Cong. Rec. H12,231 (Oct. 11, 1984) (statement of Rep. Kastenmeier) (emphasis added). Because the foreign-duplicated copies of Windows object code are not "manufacture[d] . . . within the United States," they do not fall within the ambit of Section 271(f).

Section 271(f) was not designed to prohibit a U.S. company from exporting a single master version of a component of a patented invention even if a foreign manufacturer made copies of that component for final assembly outside of the United States. Congress did not intend, for example, to prohibit the defendant in *Deepsouth* from supplying templates or prototypes that would allow the duplication of component parts of a shrimp deveining machine in foreign countries. If it had intended to reach such conduct, Congress could have added language to Section 271(f) declaring it an act of infringement to "make a component of a patented invention outside of the United States," or to "suppl[y] from the United States" the design specifications required to make the copies overseas. In combination with the enacted text of Section 271(f), such language would have facilitated the imposition of liability whenever an unauthorized component of a patented invention—manufactured overseas or in the United States—could be traced back to a U.S. company. The absence of such language is fatal to AT&T's case.

In holding that Section 271(f) applies to foreign-manufactured copies of object code, the Federal Circuit ac-

knowledged that it was seeking to account for "advances in a field of technology . . . that developed *after* the enactment of § 271(f)." Pet. App. 10a (emphasis added); *see also ibid.* ("Section 271(f), if it is to remain effective, must therefore be interpreted in a manner that is appropriate to the nature of the technology at issue"). The Federal Circuit attempted to justify its rewriting of the statute by speculating that "[t]o decide otherwise would emasculate § 271(f) for software inventions." *Id.* at 6a n.2. But Congress is well aware that copies as well as originals may be supplied and that the copying of various products other than software—including pharmaceuticals—can be accomplished with relative ease. Congress has expressly specified where it intends a statute to reach the supply of such copies. *See, e.g.*, 35 U.S.C. § 12 ("The Director may supply copies of specifications and drawings of patents and published applications for patents in printed or electronic form to public libraries in the United States which shall maintain such copies for the use of the public"). In Section 271(f), however, Congress made no mention of copies; rather, it prohibited the supply of "components" where "such components"—that is, the originals—may be combined overseas.

Moreover, the Federal Circuit is wrong to suggest that the adoption of Microsoft's arguments would exempt all software inventions from the scope of Section 271(f). U.S. companies distribute software to foreign markets in a number of different ways, many of which could implicate Section 271(f). For example, while Section 271(f) does not reach *foreign*-produced copies of object code duplicated from a U.S.-designed original, it would likely apply to a U.S. company that exported *domestically* produced software-encoded disks or microchips intending that foreign manufacturers or users incorporate those same disks or microchips into a computer system. Under such a distribution model, the software company might have induced the overseas combination of a component it "supplie[d] . . . from the United States." The

Federal Circuit's concerns about the "emasculat[ion]" of Section 271(f) are therefore decidedly ill-founded.

When the Federal Circuit took it upon itself to ensure that Section 271(f) "remain[s] effective," Pet. App. 10a, it arrogated to itself a legislative role that properly rests with Congress. Indeed, this Court has expressly rejected judicial efforts to rewrite the text of existing patent laws to cover technologies not expressly regulated by Congress. "It is our duty to construe the patent statutes *as they now read*, in light of our prior precedents, and we must proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress." *Parker* v. *Flook*, 437 U.S. 584, 596 (1978) (emphasis added); *see also id.* at 595 ("Difficult questions of policy concerning the kinds of programs that may be appropriate for patent protection and the form and duration of such protection can be answered by Congress on the basis of current empirical data not equally available to this tribunal") (footnote omitted); *Brown* v. *Duchesne*, 60 U.S. (19 How.) 183, 197 (1857) (patent laws "should not be strained by technical constructions to reach cases which Congress evidently could not have contemplated").

This case provides the ideal vehicle to remind the Federal Circuit that it is not the Judiciary but Congress that is the appropriate branch of the federal government to decide whether existing laws should be modified to take account of technological changes. *See Deepsouth*, 406 U.S. at 530.[7] Unless and until Congress amends the existing patent laws, courts must treat software products like any other products of manufacture. If copies are made in and exported from the United States, they may be subject to Section 271(f); if they are made overseas, they are not. That simple principle,

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[7] In this regard, it is telling that Congress is currently considering a bill to *repeal*—not expand—Section 271(f). *See* Patent Reform Act of 2006, S. 3818, 109th Cong. § 5(f) (2006).

which follows from the plain language of the statute, is all that is necessary to decide this case.

2. Any conceivable doubt about whether Section 271(f) reaches foreign-manufactured components is completely dispelled by the presumption against the extraterritorial application of U.S. law.

It is a "longstanding principle of American law that legislation of Congress, unless a contrary intent appears, is meant to apply only within the territorial jurisdiction of the United States." *EEOC* v. *Arabian Am. Oil Co.*, 499 U.S. 244, 248 (1991) (internal quotation marks omitted). This presumption against extraterritoriality is grounded in comity considerations and "serves to protect against unintended clashes between our laws and those of other nations which could result in international discord." *Ibid.* The presumption also reflects the fact that the legislative and executive branches are far better equipped than the judiciary to evaluate the complex foreign policy considerations raised by the extraterritorial application of U.S. law. Indeed, decisions affecting international relations are "of a kind for which the Judiciary has neither aptitude, facilities nor responsibility." *Chicago & S. Air Lines, Inc.* v. *Waterman S.S. Corp.*, 333 U.S. 103, 111 (1948).

Because of these comity considerations and separation-of-powers concerns, courts will not construe a U.S. law as encompassing foreign conduct "unless ... the affirmative intention of the Congress" to apply a law extraterritorially is "clearly expressed" in the statutory language. *Arabian Am. Oil Co.*, 499 U.S. at 248 (internal quotation marks omitted). Indeed, even if the more natural reading of the statute encompasses foreign activity, as long as "the statute's language reasonably permits an interpretation consistent with" the general presumption that Congress seeks to avoid interference with other nations' sovereignty, a court "should adopt

it." *F. Hoffman-La Roche Ltd.* v. *Empagran S.A.*, 542 U.S. 155, 174 (2004).

The presumption against the extraterritorial application of U.S. law is especially strong in the patent context because the application of U.S. patent law to foreign commercial activity intrudes upon other nations' intellectual property law systems and thereby creates a significant risk of international discord. This Court has thus long recognized that U.S. patent laws generally are "not intended to[] operate beyond the limits of the United States." *Brown*, 60 U.S. (19 How.) at 195; *see also* 35 U.S.C. § 154(a)(1) ("Every patent shall . . . grant to the patentee . . . the right to exclude others from making . . . or selling the invention *throughout the United States*") (emphasis added); *id.* § 271(a) ("whoever without authority makes, uses, offers to sell, or sells any patented invention, *within the United States*, . . . infringes the patent") (emphasis added). Indeed, this Court has recognized that, because U.S. patent law is territorially limited, it does not prohibit a patentee's competitors, in overseas markets, from duplicating or reverse-engineering inventions patented in the United States, or assembling such inventions from foreign-manufactured component parts. *See Dowagiac Mfg. Co.* v. *Minn. Moline Plow Co.*, 235 U.S. 641, 650 (1915) (concluding that a defendant could not be held liable under U.S. law for making unauthorized sales of patented inventions in Canada).[8]

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[8] Although U.S. law does not protect U.S. patent holders from overseas activities, they are not without recourse against foreign competition. U.S. patent holders are able to seek protection for their intellectual property under foreign patent law and to invoke these foreign legal remedies in response to foreign acts of infringement. The Federal Circuit expressly stated that it would take no account of foreign patent laws. Pet. App. 6a-7a n.2. But AT&T holds patents on its Digital Speech Coder in Canada, France, Germany, Great Britain, Japan, and Sweden. C.A. J.A. 1477. Extending Section 271(f) to reach foreign-produced copies of the Windows operating system would not only displace the infringement remedies that AT&T may have under those countries' laws, but create the sub-

AT&T has maintained that the presumption against extraterritoriality should not be applied here because Section 271(f) "was enacted for the *sole and express purpose* of addressing the interplay between U.S. and foreign law." Second Supp. Cert. Br. 6. But in so doing, Congress did *not* mark out an exception to the territorial limitations of the Patent Act. To the contrary, in responding to *Deepsouth*, Congress expanded the scope of infringing acts to include additional activity that occurs entirely *within the United States*—that is, "suppl[ying] or caus[ing] to be supplied *in or from* the United States." 35 U.S.C. § 271(f)(1) (emphasis added). The prohibited activity—supplying components "in or from" this country—is entirely domestic; Section 271(f) as enacted by Congress thus has no extraterritorial effect. *Waymark Corp.* v. *Porta Sys. Corp.*, 245 F.3d 1364, 1368 (Fed. Cir. 2001).

The Federal Circuit's decision in this case, however, would impermissibly give Section 271(f) extraterritorial effect by extending infringement liability to conduct—the making of copies overseas—that occurs entirely on foreign soil. Pet. App. 12a (Rader, J., dissenting). Section 271(f) prohibits its domestic companies from inducing foreigners to assemble infringing devices (by "combin[ing]" "components" shipped from the United States); it does not prohibit a domestic company from inducing the manufacture of components overseas. Thus, there is an important difference between engineering and manufacturing. Microsoft's engineers design computer programs in the United States; but Microsoft relies on other companies, both domestic and foreign, to manufacture the

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stantial risk of overlapping and duplicative liability for the same conduct. In contravention of the firm territorial restrictions on U.S. patent law, the Federal Circuit's approach would effectively transform the Patent Act into a supranational body of intellectual property law. *See* Pet. App. 18a (Rader, J., dissenting).

physical media by which Microsoft software is delivered to end-users. Where, as here, the copies are made in a foreign country, imposing infringement liability for that overseas activity would be an extraterritorial application of the statute. It therefore runs counter to the rule that the statute should be construed to *avoid* such extraterritorial application. *Empagran S.A.*, 542 U.S. at 174.

AT&T has responded that "Microsoft has been held liable not for conduct performed abroad, but for conduct performed in the United States with the knowledge that the conduct may have particular consequences abroad." Second Supp. Cert. Br. 5. To be sure, Microsoft knows that foreign manufacturers will use the golden master disks and encrypted transmissions to make copies of the Windows object code; but those copies are made overseas. Section 271(f) does *not* make it an act of infringement to make overseas copies (or assemble devices overseas). Rather, the infringing act is supplying components from the United States. The "conduct performed [by Microsoft] in the United States" did not include supplying foreign-manufactured components; the Federal Circuit's contrary conclusion transgresses the presumption against extraterritoriality.

II. What Microsoft Did Supply From The United States Were Not Components Of A Patented Invention Combined Abroad

Rather than the "machine-readable object code" that the parties stipulated was the applicable "component" in this case—or, as AT&T put it in its brief to the Federal Circuit, "the actual object code that causes the computers to operate," the "functional, operational, useful and patentable software," Resp. C.A. Br. 13, 35 (emphasis omitted)—AT&T now asserts that it is the computer programming instructions themselves, in the abstract—"intangible 1s and 0s," "a binary sequence of numbers that 'lacks physical existence'"—that is the "'component' at issue." Second Supp. Cert. Br. 1, 4.

This duck-and-dodge tactic fails here for two reasons: First, whatever its briefs might next assert is the "'component' at issue," AT&T is bound by the facts to which the parties stipulated below. There, AT&T "agree[d] that, other than the 'golden master disks' and the encrypted transmissions of Windows object code, Microsoft does not supply any 'component' from the United States for assembly abroad." Pet. App. 47a ¶ 10. But even if this Court could disregard those stipulated facts—and clearly, it cannot—the abstract "sequence of numbers" AT&T now claims is "at issue" is neither a component of AT&T's patented invention, nor could it be under Section 271(f).

A. Under The Parties' Stipulation, The Physical Media At Issue In This Case Are Not "Components" Of A Patented Invention

In the district court, the parties framed the second question presented thusly: "AT&T alleges, and Microsoft disputes, that the 'golden master disks' and the encrypted transmissions of Windows object code constitute 'components' within the meaning of 35 U.S.C. 271(f)." Pet. App. 46a ¶ 10. The parties further "agree[d] that, other than the 'golden master disks' and the encrypted transmissions of Windows object code, Microsoft does not supply *any* 'component' from the United States for assembly abroad." *Id.* at 47a ¶ 10 (emphasis added).

Thus, to resolve this case, the Court need not decide whether software can *ever* be a "component of a patented invention" within the meaning of Section 271(f).[9] The Court

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[9] Microsoft does *not* contend that "software" can *never* be a component of a patented invention. In fact, Microsoft agrees with the United States (U.S. Cert. Br. 8) that physical media containing the machine-readable object code, combined with a general purpose computer to perform the functions of a special purpose speech coding device, could constitute a component of AT&T's Digital Speech Coder invention. *See also* Resp. C.A. Br. 28. The Microsoft patents to which AT&T has pointed

need only decide the much narrower question whether the two things that Microsoft actually supplied from the United States—the golden master disks and the encrypted electronic transmissions—constitute "components" of the foreign-assembled computers that allegedly infringe upon AT&T's patented speech coder invention. *That* question must be answered in the negative.

Liability attaches under Section 271(f) where a person supplies the "components of a patented invention" from the United States and "induce[s] the combination of such components" in a manner that would infringe a U.S. patent if done domestically. 35 U.S.C. § 271(f)(1); *see also id.* § 271(f)(2) (the defendant must "intend[] that such component will be combined"). A "component" is "a constituent part" or "ingredient" of something else. RANDOM HOUSE UNABRIDGED DICTIONARY 419. It is undisputed, however, that neither the golden master disks nor the master code they contain was ever installed on a computer that was sold. Indeed, the parties stipulated that they were not. Pet. App. 45a ¶ 5. Likewise, neither the electronic transmissions nor the machine-readable code they store was ever installed on a computer that was sold. *See id.* at 46a ¶ 7. Only foreign-made "*copies*" of the object code for the Windows operating system were installed on the foreign computers. *Id.* at 46a ¶¶ 7, 9. Of course, as discussed above, those foreign-made copies are not "supplie[d] . . . from the United States."

Under these stipulated facts, the golden master disks and electronic transmissions themselves—the only alleged "components" at issue under the stipulation in this case—cannot be "components of a patented invention" under Section

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(Br. in Opp. to Pet. for Cert. 14) refer to "software components" in precisely that sense. *See* Supp. J.A. 29, 50, 62. No such component, however, is supplied by Microsoft from the United States on the stipulated facts of this case.

271(f) because they were never (and were never intended to be) "combin[ed]" with other components in a manner that infringes upon AT&T's patent. The disks and transmissions were never integrated (or intended to be integrated) into the foreign-assembled computers that allegedly infringe AT&T's patent and therefore are not "constituent parts" of those computers. Just as a mold or die used to produce copies of one of the parts of a shrimp deveining machine would not be a "component"—a constituent part—of the assembled machines, the master disks used to produce copies of Microsoft's Windows software—whether glass or "golden"—are not components of the computers onto which those copies are installed. They are templates that are themselves never intended to be combined in a computer apparatus, and thus cannot be "components of a patented invention" within the meaning of Section 271(f).[10]

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[10] That design templates are not statutory components is confirmed by the legislative history of Section 271(f). Congress explained that Section 271(f) was a response to this Court's *Deepsouth* decision that "prevent[s] copiers from avoiding U.S. patents by supplying components of a patented product in this country so that the *assembly* of the components may be completed abroad." 130 Cong. Rec. H10,525 (Oct. 1, 1984) (emphasis added); 130 Cong. Rec. H12,231 (Oct. 11, 1984) (statement of Rep. Kastenmeier) ("a product's patent cannot be avoided through the manufacture of component parts within the United States for *assembly* outside the United States") (emphasis added). The legislative history's emphasis on the "assembly" of components and on *Deepsouth* indicates that Congress was concerned with the specific facts of *Deepsouth* when enacting Section 271(f)—the shipment overseas of the constituent parts of an invention and the final assembly of those same constituent parts overseas—not with the export of templates used by foreign companies to manufacture an invention's parts.

B. A "Binary Sequence Of Numbers That Lacks Physical Existence" Cannot Be A "Component Of A Patented Invention" Under Section 271(f)

Apparently recognizing that the golden master disks and the encrypted transmissions are not "components of a patented invention," AT&T argues in this Court that the *information* conveyed via those media—"the Windows object code, a binary sequence of numbers that 'lacks physical existence'"—is the relevant "component." Second Supp. Cert. Br. 4. This argument contravenes the stipulation that AT&T signed in the district court, which unequivocally states that "other than the 'golden master disks' and the encrypted transmissions . . . Microsoft does not supply any 'component.'" Pet. App. 47a ¶ 10. It is also an about-face from the position that AT&T took in the court of appeals, where it *disclaimed* any contention that "Microsoft's provision of 'information,'" or "product designs," constituted an infringing act under Section 271(f). Resp. C.A. Br. 12-13, 34-35; *see also* Br. in Opp. to Pet. for Cert. 16 (arguing that "software is not 'information'").

Microsoft agrees with the United States that the computer-readable and -executable "software copy that is actually loaded onto [a] computer[]" may be a "component of a patented invention" under Section 271(f). U.S. Cert. Br. 8; *see* note 9, *supra*. Indeed, Microsoft acknowledged in the district court that the exportation of individual copies of physical media containing computer programs to be executed on a foreign-manufactured computer (as opposed to a single golden master disk) might give rise to liability under Section 271(f). J.A. 26; *see also* Cert. Reply Br. 7 n.4.[11]

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[11] For such liability to attach, the exporter would have to intend or expect that the end-user would run the computer program directly from the U.S.-supplied disk, rather than from a copy made in a foreign country. *See* note 2, *supra*. For example, many video game systems require that

Contrary to AT&T's latest theory, however, a "binary sequence of numbers that 'lacks physical existence'" is *not* a "component" under the statute, for two related reasons. *First*, such a digital sequence is design information, analogous to product specifications, or a recipe; while that information can be used to *make* products, machines, or speech coding devices (and is so used by foreign manufacturers), the design information is not itself a component of the manufactured device. *Second*, a digital sequence "that 'lacks physical existence'" is incapable of being "combined" with other components (*e.g.*, a general purpose computer, a microphone, and a speaker) to practice the invention. Such a digital sequence can direct a general purpose computer to function as the device claimed in the patent only when it is readable and executable by a computer. A digital sequence that exists only in the ether is neither.

1. Uncoupled from any computer-readable medium, object code—what AT&T now calls a "binary sequence of numbers that 'lacks physical existence'"—is simply design information. It is a set of instructions directing the computer's microprocessor to open or close one of its millions of switches and align its circuits in a particular manner. Object code thus can instruct a general purpose computer to alter its circuitry to become a special purpose computer (including a digital speech coder device). *See In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc).

What differentiates object code from other types of design information is that object code is readable and executable by a computer. But stripped of that key characteristic—as an abstract "binary sequence of numbers" most surely is—object code is just instructions for doing something, no dif-

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the disk containing the game be physically present in the machine for the program to run.

ferent from the design instructions one may glean from blueprints, recipes, computer program listings, and patents. Those instructions are not "components" of the finished products to which they pertain.

Section 271(f) applies in the situation where "everything was accomplished in this country except putting the pieces together as directed." *Deepsouth*, 406 U.S. at 533 (Blackmun, J., dissenting). Congress specifically addressed the "pieces" (components); but it did not prohibit the supply of "direct[ions]." Thus, if a manufacturer sends abroad all of the parts of a shrimp deveining machine with assembly instructions, it has violated Section 271(f); but if the manufacturer sends to its foreign counterparts *only* the instructions, with the expectation that the parts will be produced and assembled abroad, there is no infringement. *Pellegrini*, 375 F.3d at 1118.

In *Pellegrini*, the Federal Circuit correctly held that a domestic manufacturer was not liable under Section 271(f) for sending foreign manufacturers the design specifications for an allegedly infringing circuit chip. The court explained that the U.S. manufacturer had not "supplie[d]" a "component" of the chip from the United States because Section 271(f) "refers to physical supply of components, not simply to the supply of instructions" used to fabricate a patented device overseas. 375 F.3d at 1118.

In *Eolas Technologies Inc.* v. *Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir.), *cert. denied*, 126 S. Ct. 568 (2005), however, the Federal Circuit erroneously concluded that master code conveyed overseas via golden master disk "is much more than a prototype, mold, or detailed set of instructions." *Id.* at 1339. This was so, according to the *Eolas* court, because unless "[e]xact duplicates of the software code on the golden master disk are incorporated as an operating element of the ultimate device," "the invention would not work at all." *Ibid.* But that reasoning shows only that the foreign-

produced, computer-readable and "opera[ble]" *copies* of the Windows code might be components; it says nothing at all about whether the master code from which those copies are produced (or, for that matter, an abstract sequence of digits in the ether) can also be considered a component.[12] If a patented shrimp deveining machine will not work without a particular part, that part might well be a statutory component; but the design specifications for that part—which allow production of it and assembly of the patented invention overseas—are not themselves components. Likewise, contrary to the *Eolas* court's entirely unsupported *non sequitur*, the master Windows code here operates as nothing other than a "detailed set of instructions" for the overseas fabrication of a special purpose computer; it cannot be considered a "component" of that special purpose computer.

In the decision below, the Federal Circuit said that "what is being supplied abroad is an actual component, *i.e.*, the Windows operating system, that is ready for installation on a computer to form an infringing apparatus—not instructions to foreign software engineers for designing and coding Windows." Pet. App. 8a. This statement is at war with the parties' stipulation, which explains that the object code stored on the golden master disks, "ready" or not, is "never installed on a computer that is then sold." *Id.* at 45a ¶ 5. Rather, the infringing apparatus is "form[ed]" *only* by the installation of a *copy* of Windows made by the foreign manufacturer pursuant to the instructions embodied in the master version. *Id.* at 46a ¶ 7. The "binary sequence of numbers that 'lacks physical

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[12] In fact, *Eolas* strongly suggests that an abstract digital sequence *cannot* be a component of a patented device. *Eolas* took pains to emphasize that the claimed component was "'computer readable program code.'" 399 F.3d at 1339. Computers lack the capability to read and interpret a "binary sequence of numbers that 'lacks physical existence.'" Second Supp. Cert. Br. 4. Such a sequence must be recorded on a physical medium, like a disk, to be readable and executable by a general purpose computer. *See* U.S. Cert. Br. 9.

existence'" now cited by AT&T constitutes, at most, abstract design instructions and cannot itself be viewed as a component of AT&T's patented invention.[13]

2. Moreover, AT&T's theory that a "binary sequence of numbers that 'lacks physical existence'" can be a "component" under Section 271(f) cannot be reconciled with the text of the statute. As discussed above, a "component" is "a constituent part" or "ingredient." RANDOM HOUSE UNABRIDGED DICTIONARY 419. In a patented cake, the sugar, eggs, and flour would be "components"; but the recipe (assembly instructions) clearly would not be. And likewise, abstract instructions floating in the ether, which are neither readable nor executable by a computer, cannot constitute a component of a programmed-computer invention. To return to the player piano, the "perforated rolls" constitute "component parts of a machine which executed the composition." *Goldstein* v. *California*, 412 U.S. 546, 565 (1973). But the pattern of perforations (a "binary sequence of numbers that 'lacks physical existence'") is not such a component.

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[13] Indeed, AT&T's own patent compels this conclusion. The apparatus claims of the '580 patent are uniformly stated in means-plus-function format. *See, e.g.*, '580 patent, cols. 23-24 (Supp. J.A. 19) ("Apparatus for producing speech message comprising: means for receiving . . . means for converting . . . and means jointly responsive") (italics omitted). *See generally* 5A DONALD S. CHISUM, CHISUM ON PATENTS § 18.03[5] (2005) (discussing means-plus-function specification of patent claims). The patent laws provide that claims written in such means-plus-function format "shall be construed to cover the corresponding structure, material, or acts described in the specification." 35 U.S.C. § 112 ¶ 6. Claims written in such language do not, by force of law, "cover" essential nonphysical predicates to the invention, such as its design. *See, e.g., Symbol Techs., Inc.* v. *Opticon, Inc.*, 935 F.2d 1569, 1575 (Fed. Cir. 1991) ("the scope of such a claim is not limitless, but is confined to *structures* expressly disclosed in the specification and corresponding equivalents") (emphasis added).

Section 271(f) requires the "combination" of components. "Combine" means to "join in a close union" or to "unite." RANDOM HOUSE UNABRIDGED DICTIONARY 408; *see also Deepsouth*, 406 U.S. at 528 (defining "combination" as "union of elements"). Just as one cannot unite a recipe and an egg, a "binary sequence of numbers that 'lacks physical existence'" cannot be joined physically with anything. And, in fact, the object code supplied on the golden master disks *is not* "combined" with other components to practice the patented invention. The foreign-made, computer-readable copies are; but the statute applies only to combinations involving the *original* component shipped overseas. *See* 35 U.S.C. § 271(f)(1) (prohibiting the supply of components "in such manner as to actively induce the combination of *such* components") (emphasis added).

Moreover, abstract design information like an accused nonphysical sequence of numbers cannot be "supplie[d] . . . from the United States" as Section 271(f) requires. To be sure, it is possible to "supply" "information." *See, e.g.*, 26 U.S.C. § 7203 (prohibiting the willful failure to "supply any information" required by tax laws and regulations). But before information can be "supplied," *i.e.*, provided or furnished, it first must be reduced to some physical format, be it a piece of paper, an electromagnetic impulse, or a radio wave. Abstract information that "lacks physical existence" is not susceptible to transmission. More than that, until information is given a physical manifestation, it is impossible to determine the location from which it is supplied. Information cannot be supplied from the United States if it is never physically present in the United States. *See Pellegrini*, 375 F.3d at 1118.[14]

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[14] The implied requirement that a "component" be physical in nature is further supported by other uses of the term "component" in Section 271. Section 271(g)—the companion provision to Section 271(f) that prohibits the importation into the United States of products manufactured overseas

Still, though, the mere fact that design information has been reduced to a physical format does not necessarily mean that it is a component that may be combined with other components into a patented invention. The fact that a recipe for a patented cake is printed on paper does not remotely suggest that the paper may be combined with eggs, flour, and sugar to become part of the cake. Accordingly, AT&T conceded below that "a printed copy of program source code" could not be a component because "it lacks practical application until it is put in a form that a computer can actually use." Resp. C.A. Br. 34-35. Similarly, a manuscript copy of the Windows object code could not be a component because it could not be read or executed by a general purpose computer. And it necessarily follows that a "binary sequence of numbers that 'lacks physical existence'" cannot be a component, because, like the source code manuscript, such an abstract

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using a process patented under U.S. law—provides that "[a] *product* which is *made* by a patented process will, for purposes of this title, not be considered to be so made after . . . it becomes a trivial and nonessential *component* of another product." 35 U.S.C. § 271(g) (emphases added). In *Bayer AG* v. *Housey Pharms., Inc.*, 340 F.3d 1367 (Fed. Cir. 2003), the Federal Circuit recognized that because the term "product" necessarily implies a physical object of manufacture, the term "component" must also refer only to "a physical product." *Id.* at 1372-73. Similarly, both Section 271(c) and Section 271(f)(2) prohibit the furnishing of a "component" that is "especially made or especially adapted for use" in a patented invention, but carve out exceptions for a component that is a "staple article or commodity of commerce." 35 U.S.C. § 271(c), (f)(2). This Court, however, has never found anything other than a physical product—an object of manufacture—to constitute a staple article of commerce. *See Sony Corp. of Am.*, 464 U.S. at 490 n.41 ("The 'staple article of commerce' doctrine protects those who *manufacture products* incorporated into or used with patented inventions—for example, the paper and ink used with patented printing machines, or the dry ice used with patented refrigeration systems") (emphasis added; citations omitted).

sequence of digits cannot be read or executed by the computer. It cannot direct a computer to do anything.

One final example, drawn from AT&T's patent itself, illustrates the futility of its argument that a "binary sequence of numbers that 'lacks physical existence'" can be a "component" within the meaning of Section 271(f). As noted above, the inventor appended to the '580 patent the source code for a computer program, which if compiled and executed would cause a compatible computer to function as the claimed speech coder apparatus. Once compiled into object code, that very program could be expressed as a "binary sequence of numbers that 'lacks physical existence.'" If a Microsoft programmer were to memorize that sequence, fly to a foreign country, and use the sequence to program 100 computers to function as speech coders, would Microsoft have committed 100 acts of infringement under Section 271(f)? Or, equivalently, would Microsoft commit 100 infringing acts if it were to mail a copy of AT&T's patent to a foreign country, where a programmer compiles the program, makes 100 disk copies of the object code, and installs them on 100 computers? Each of these questions must be answered in the negative, for the simple reason that in neither instance has Microsoft supplied a statutory "component" from the United States. For the same reason, the decision below should be reversed.

CONCLUSION

For the foregoing reasons, the judgment of the court of appeals should be reversed.

Respectfully submitted.

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